Harsh Mahajan

+91-9753351408 | mahajanharsh1909@gmail.com | GitHub: Portfolio | LinkedIn: harshmahajan1909

PROFILE

Highly analytical Quantitative Researcher with 2.5 years of experience leveraging data analysis, machine learning, and predictive modeling techniques to generate actionable business insights. Proven ability to translate complex datasets into strategic recommendations, demonstrated through projects spanning from research inception to production deployment. Expertise in statistical analysis, model development (including TensorFlow), and data visualization using tools like PowerBI.

EXPERIENCE

Quantitative Researcher - QR System LLP

Mumbai, India   *January 2024 - Present*

* Conducted predictive analytics on US stocks utilizing alternative datasets to enhance investment strategies and inform decision-making.

* Performed sector-level performance attribution analyses, contributing to strategic investment frameworks and assessments.

* Executed end-to-end projects, from initial research conception through the development of production-ready code for model deployment.

* Collaborated with data and portfolio teams to integrate analytical findings into portfolio construction processes.

* Developed machine learning algorithms for factor generation based on alternative datasets leveraging techniques like PCA.

* Investigated relationships between fundamental and news datasets using regression frameworks, generating valuable predictive indicators.

Data Analyst - Vastu Housing Finance Pvt. Ltd.

Mumbai, India   *February 2024 - December 2024*

* Designed and executed SQL queries to extract data from diverse sources (e.g., bureau data, customer details, loan details) for comprehensive analysis.

* Curated optimized data pipelines for data preparation, encompassing cleaning, transformation, and feature generation processes.

* Developed a machine learning classification model for customer loan approval, bounce status, and foreclosure possibility, achieving significant cost savings (estimated Rs 5 Million annually).

* Engineered a risk-based scoring framework using ML models specifically tailored for housing loan assessments.

* Implemented API endpoints for real-time prediction utilizing Altair Rapid Miner and Fast API, facilitating seamless integration with business applications.

* Participated in data visualization and Exploratory Data Analysis (EDA) using SQL queries and PowerBI to uncover key trends and insights.

* Mentored two interns in the development of machine learning models, fostering collaboration and knowledge transfer.

EDUCATION

Master of Science in Financial Engineering - World Quant University

Remote (USA)   *Pursuing*

Doctor of Philosophy in Structural Engineering - Indian Institute of Technology Bombay

Mumbai, India   *July 2016 - August 2024*

GPA: 8.41
Thesis: Machine Learning Enabled Active and Passive Health Monitoring of Railway Tracks

Master of Science in Financial Engineering - Shri G.S. Institute of Technology and Science

Indore, India   *July 2013 - November 2015*

GPA: 7.82
Thesis: Decision model for Repair Prioritization of Reinforced Concrete Structure

SKILLS

Python, SQL, Machine Learning, Statistical Analysis, PowerBI, PCA, Quantitative Finance, Data Analysis, TensorFlow, RAG, LLM, RapidMiner, FastAPI, Data Visualization, Predictive Modeling

CERTIFICATIONS

*Foundations of Financial Engineering
  World Quant University
*ChatGPT Prompt Engineering for Developers
  DeepLearning.ai
*Agile Project management
  Google
*Advanced Certificate Programme in Machine learning and Deep learning
  IIIT Bangalore
*Data Science Professional Certificate
  IBM

PUBLICATIONS

*Acoustic emission source localisation for structural health monitoring of rail section based on deep learning approach
H. Mahajan, S. Banerjee | Research Article | Measurement Science and Technology (IOP) | Volume 34, Number 4
DOI: https://doi.org/10.1088/1361-6501/acb002

*Quantitative Investigation of Acoustic Emission Waveform Parameters from Crack Opening in a Rail Section Using Clustering Algorithms and Advanced Signal Processing
H. Mahajan, S. Banerjee | Research Article | Sensors (MDPI) | Volume 22(22), Number 8643
DOI: https://doi.org/10.3390/s22228643

*A machine learning framework for guided wave based damage detection of rail head using surface bonded piezo-electric wafer transducers
H. Mahajan, S. Banerjee | Research Article | Machine Learning with Applications (Elsevier)
DOI: https://doi.org/10.1016/j.mlwa.2021.100216